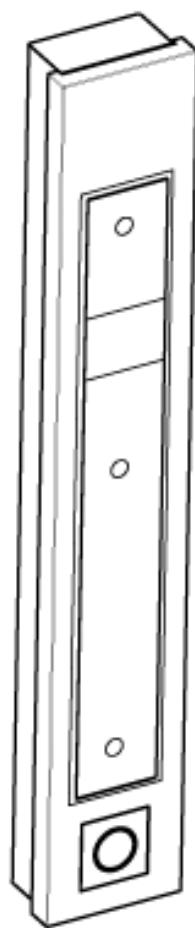




Operating instructions

Biometrics Face module
ES7310



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1 Introduction

About these instructions

These instructions contain important notes and information on operation of the Biometrics Face module ES7310

- Read through the instructions carefully and attentively.
- Keep the instructions in a safe place and pass them on to each subsequent user of the Biometrics Face module.

Explanation of the symbols and signal words used

	WARNING	Indicates risks which could result in fatal or severe personal injuries.
	CAUTION	Indicates risks which could result in fatal or severe personal injuries.
	CAUTION	Indicates risks which could result in damage to property.
	Note	Denotes information, notes and tips on optimum use of the instructions and the product.

Target group

These instructions are directed at competent personnel entrusted with the servicing, maintenance and disposal of trouble-free operation of the Biometrics Face module and who has successfully completed suitable vocational training for these activities or has had the necessary appropriate experience.

OPERTIS Support

If you have any questions extending beyond the information provided in these instructions, please contact

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Prof.-Bier-Straße 1-5
D-34454 Bad Arolsen

Tel.: +49 5691 87741-200
Fax: +49 5691 87741-281
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Up-to-date status of the information

All details on the product, images, dimensions and models correspond to the status at the time the product is delivered. We reserve the right to make changes due to technical progress and the resulting continuous improvement process to which our products are subjected.

The current version of these instructions and further information is also available on our internet site www.opertis.de.

Dated 03/2012

2 Product Description

Overview

The following variants of the Biometrics Face module are described in these instructions:

Art. No.	Name
ES7310UEV	Biometrics Face module Online, flush-mounted installation
ES7310UET1	Biometrics Face module Online plus, flush-mounted installation
ES7310AEV	Biometrics Face module Online, surface installation
ES7310AET1	Biometrics Face module Online plus, surface installation

Functional principle

The OPERTIS eLOCK lock system ensures continuous public and commercial building fitout. Special fitting solutions are available for different door types.

In addition to the authorisations assigned on identifiers, the Biometrics Face module also checks the facial features of the person assigned to the identifier.

The Biometrics Face module is suitable for mounting on a wall (surface mounted version) or an opening made for it (flush-mounted version).

The management and programming of the fittings, including the issue of access authorisations, is carried out using the eLOCK Center management software, Version 7.3.C and higher.

Passive identifiers of various types, such as keys, key fobs, cards and customised types to a customer's specific requirements are available in the eLOCK locking system for authorisation at the fittings. These identifiers must be held at the wall scanner antenna in the biometrics module for authorisation checking.

Detailed information

Further information on the product is given in Section 8 "Product Specifications".

3 Intended Use

Area of use

The Biometrics Face module is designed for use within an eLOCK lock system to activate peripheral devices, for example, electric door openers, electric locks, motorised bars, holding magnets, electrical door and gate drives, barriers, lifts, letter boxes, etc.

The Biometrics Face module is suitable for use in the sensitive security area (inside the building). The central control is designed for installation within the protected indoor area.

Condition of the product

Biometrics Face module may only be used if they are in a technically perfect condition.

Independent modifications and changes to the product are not allowed.

Ambient conditions

- Use in a particularly polluted environment, e.g. in aggressive gases or in extreme temperatures, is not allowed.
- Note!

In general, avoid laying cables in the immediate vicinity of sources of interference. Additional cable screening is recommended if noise or interference occurs under the ambient conditions.

If you have any questions, please contact OPERTIS Support.

Residual risk

If used properly and if the maintenance instructions are followed, this product will support your property security.

However, the following residual risks cannot be excluded:

- If the mains voltage fails there is a risk of being locked in or out. In this case it is only possible to open the door using mechanical tools.
- If the electronics fail there is a risk of being locked in or out. It is then only possible to open the door using mechanical tools. In this case, contact OPERTIS support.
- If a Biometrics Face module is used for access control to a fuse box there is a risk of being locked in or out if a fuse is defective. It is then only possible to open the door using mechanical tools.
- OPERTIS recommends the use of an uninterruptible power supply (UPS) to ensure operation of the Biometrics Face module during a power failure.

4 Safety Instructions

The following safety instructions must be read and followed before use! OPERTIS does not accept any liability whatsoever for personal losses or injuries or damage to property caused by failure to note and follow these instructions!



WARNING

Risk of personal injuries and damage to property

If parts of the open central control or connection cables are touched while the power supply is switched on there is an increased risk of injuries (electric shock!). The Biometrics Face module and/or the connected peripheral device can be irreparably damaged.

Carry out installation and maintenance work only if the power supply is switched off.

Note and observe the VDE Guidelines (VDE-0100)!



CAUTION

Risk of locking in or out

Peripheral devices cannot be controlled without a fully functional Biometrics Face module.

During installation of the Biometrics Face module it is necessary to ensure that the systems controlled by the Biometrics Face module do not prevent anyone from passing through.



CAUTION

Risk of malfunctions

Malfunctions can occur if the Biometrics Face module is installed in the immediate vicinity of electromagnetic alternating fields (e.g. transformer stations, MRI scanners, etc.) as well as transmitter systems.

Before installing, check whether any of the aforementioned interference factors can influence the function of the Biometrics Face module.

CAUTION**Risk of damage to property**

Electronic components can be irreparably damaged if touched. Note and observe the regulations and notes in the DIN EN 61340-5-2 standard!

CAUTION**Unauthorised access after installation**

When delivered the Biometrics Face module is in construction site mode. Access is possible with any OPERTIS identifier, even if they are not programmed.

Program the authorisations immediately after installation to prevent unauthorised access; see eLOCK system documentation software. Check time and if necessary reset.

5 Use and Operation

Programming fittings and identifiers

Fittings and identifiers are programmed using the eLOCK Center management centre or the eLOCK AddDelete system.

Detailed information on this is given in the eLOCK system documentation software.

Basic conditions

Lighting

○ No backlight

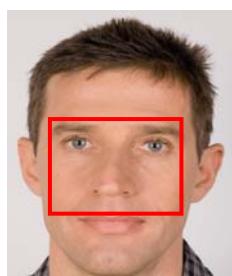
Do not direct the door module at strong backlight, e.g. a spotlight. Avoid direct sunlight or an artificial light source that falls into the camera lens.

○ Background

Avoid aligning the door module on extremely bright image backgrounds.

Position and facial expression

The optimum distance of the face from the camera lens is approx. 60-80cm.



To register the face, the facial features within the framed area are recorded. Any facial hair is not an obstruction.

The facial expression must be neutral during the teach-in at the door module and the facial features must not be concealed.

The following gives examples of possible errors and the optimum form of the facial features during the teach-in at the door module.



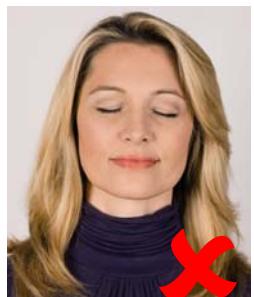
Three-quarter face



Head tilt



Optimum



Closed eyes



Hair in face



Looking to the side



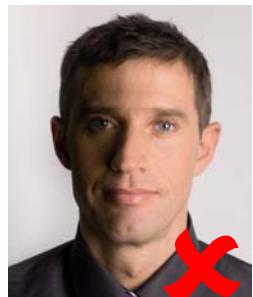
Optimum



Too dark



Reflection in the face



Cast shadows



Optimum



Spectacles frame conceals eye



Spectacles lenses too dark



Reflection



Optimum



Teach in facial features

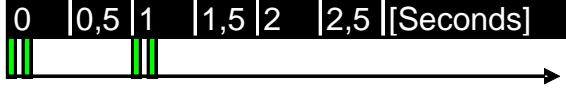
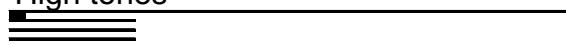
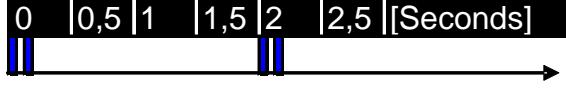
Note

Before teaching in the facial features of a person into the Biometrics Face module, an identifier with authorisation for the biometrics module must be programmed in the eLOCK Center management software and the data transferred. More detailed information is given in the eLOCK system documentation - software.

The facial features of the person with authorised access must be saved in the Biometrics Face module as a reference image.

Proceed as follows:

Step	Activity	Figure
1	<p>Hold the MASTER IT in front of the wall scanner antenna in the door module. The fitting switches to programming mode.</p> <p>Signalling:</p> <p>Fitting in programming mode</p> <p>0 0,5 1 1,5 2 2,5 [Seconds]</p> <p>High tones</p> <p>Low tones</p>	
2	<p>Hold the authorised identifier in front of the wall scanner antenna in the door module.</p>	

Step	Activity	Figure
3	<p>Look into the camera lens.</p> <p>Note and follow the basic conditions for teaching in the facial features!</p>	
4	<p>The facial features are analysed and two reference images are produced, which are saved for the authorised identifier.</p> <p>Signalling:</p> <p>Reference images teached in</p> <p>0 0,5 1 1,5 2 2,5 [Seconds]</p>  <p>High tones</p>  <p>Low tones</p> 	
5	<p>The wall scanner antenna in the door module switches to standby mode. The biometrics module can now be used.</p> <p>Signalling:</p> <p>Changes accepted, programming mode ended</p> <p>0 0,5 1 1,5 2 2,5 [Seconds]</p>  <p>High tones</p>  <p>Low tones</p> 	

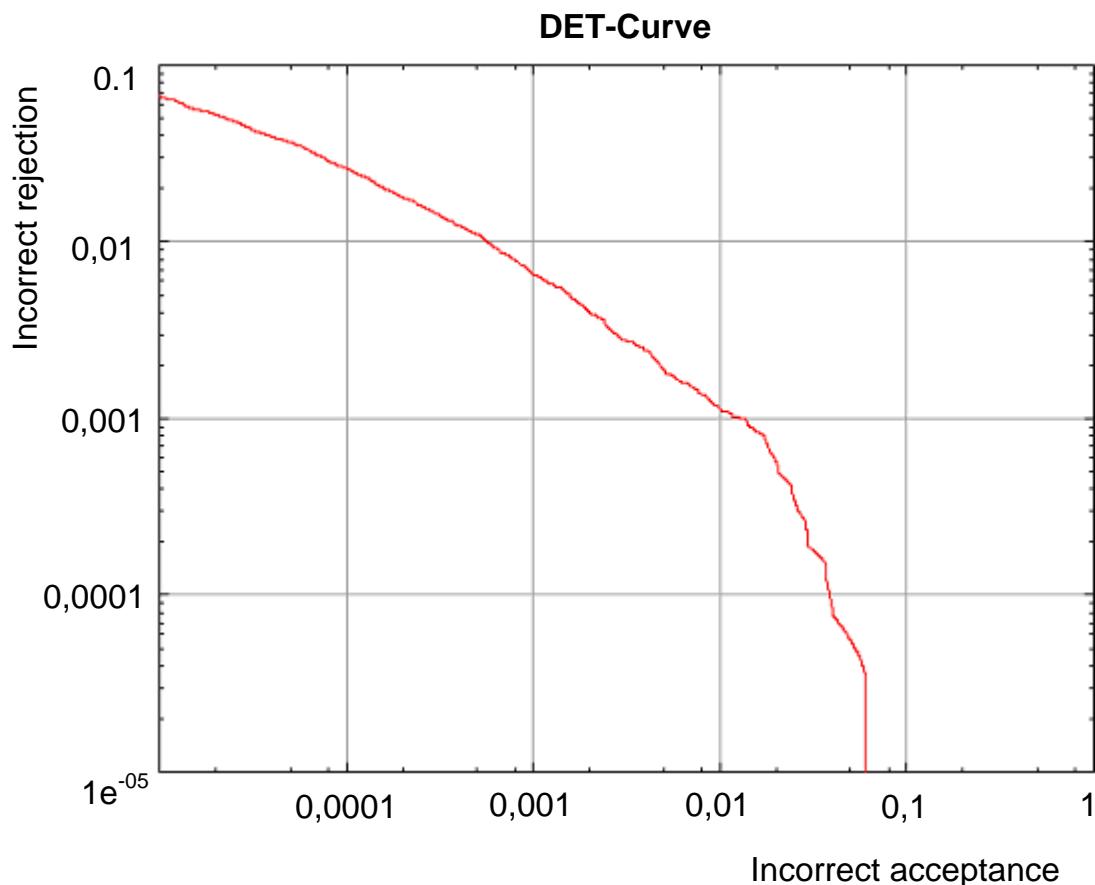
Biometric exclusion clause

Details and statements about the recognition performance of biometrics modules are statistical and result from measurements taken on reference images, which cannot fully apply to a specific use. Therefore, 100 % facial recognition is excluded.

Facial recognition technology and methods are continuously being improved and adapted to practical requirements. We do not accept any liability whatsoever for incorrect recognition or rejections at the biometrics module.

Biometric recognition performance

The biometric module's performance at recognising facial features can be illustrated using the DET curve (Detection Error Tradeoff). A study using a reference data set (FERET database) gives an incorrect recognition / errors rate of 1%. This error rate can however vary in practical use. The images of the reference data set differ with regard to the illumination of the face, the head posture, the facial expression or whether the person is wearing glasses. The persons are between 20 and 60 years old and belong to all kinds of different ethnic groups.



Acoustic and visual signals

Note

The complete visual and acoustic signals are included in the eLOCK system documentation "Signalling Concept" section.

In certain system states and events the wall scanner antenna in the door module emits acoustic and optical signals.

Wall scanner antenna (in the door module)

Visual signal	Acoustic signal	Meaning
red flashing	-	Biometrics Face module in standby.
2x short blue-blue	1x ascending sound sequence	Programming mode on.
blue flashing	-	Programming mode active.
-	1x descending sound sequence	End of programming mode (automatic)
2x short green-green	1x short high-pitch	Wall scanner connection by authorised identifier
2x short red-red	1x long low-pitch	No wall scanner connection, identifier not authorised
2x red-green	1x short high-pitch	Wall scanner connection in construction site mode or permanent release mode, see eLOCK system documentation "Fitting Modes" section.
2x short red-red 4 x yellow	1x long low-pitch+ 4x short low-pitch	System error! Please contact OPERTIS Support!

Door module display

Operating condition	Text message	Meaning
Standard mode	Datum und Uhrzeit	Biometrics Face module in standby.
	Berechtigt	The identifier and the stored facial features are authorised
	Nicht erkannt	The facial features could not be positively recognised
	Schlechte Qualität	The image is of a poor quality, e.g. illumination, clarity, contrast
	Kein Gesicht gefunden	The device was unable to recognise a face, e.g. due to severe oblique position of the face
	Nicht eingelernt	The identifier is unknown to the biometrics module as its data has not yet been transferred from the management software.
Programming mode	Schlechte Qualität	The image is of poor quality, e.g. illumination, clarity, contrast
	Kein Gesicht gefunden	The device was unable to recognise a face, e.g. due to severe oblique position of the face
	IT nicht eingetragen	The identifier is unknown to the biometrics module as its data has not yet been transferred from the management software.
Site mode	Baust.-Mode berechtigt	The fitting is in construction site mode. Each OPERTIS identifier is authorised for the lock. There is no analysis of the facial features
Active fitting time profile	Berechtigt	Each OPERTIS identifier is authorised. There is no analysis of the facial features. (Exception: Switch key)

6 Servicing, Cleaning and Maintenance

The servicing, cleaning and maintenance may be carried out by qualified personnel only.

Warranty cover is excluded for damage caused by improper handling.

Intervals

Activity	Interval
Servicing	1 year

Cleaning and maintenance

CAUTION

Property damage due to incorrect cleaning

Incorrect cleaning can cause attack and damage to the surfaces:

- Clean the Biometrics Face module from the outside only.
- Do not use alkali, acidic or chlorine-containing cleaning agents.
- Do not use cleaning agents containing abrasive additives.
- Do not use abrasive instruments, e.g. brushes

Proceed as follows:

Step	Activity	Figure
1	Wipe down the surfaces with a damp cloth.	

Servicing



CAUTION

Risk of locking in or out

Peripheral devices cannot be controlled without a fully functional Biometrics Face module.

During the functional test of the Biometrics Face module it is necessary to ensure that the systems controlled by the Biometrics Face module do not prevent anyone from passing through.

The following functional tests must be performed once a year:

Step	Activity	Result
1	Hold an authorised OPERTIS identifier in front of the antenna of the door module.	The connected peripheral device opens for the duration of the defined opening time. The wall scanner antenna in the door module and the text messages on the screen signal as specified, see "Acoustic and optical signals" section.
2	Read fitting info, check time and date, see eLOCK system documentation.	If necessary, reset time and date, see eLOCK system documentation software.

7 Problems and Solutions

Problem	Possible cause	Solution
Peripheral device does not respond.	Peripheral device is off-load.	Switch on power supply to the peripheral device.
	Peripheral device is incorrectly connected.	Correct connection.
	Peripheral device is defective.	Replace peripheral device.
	Connection conductors or cables are defective.	Replace connection conductors/cables.
	"Fuse" is defective.	Replace "fuse".
	Relay of the wall scanner control in the central control is defective.	Contact ES Support

Problem	Possible cause	Solution
Wall scanner antenna in the door module has no standby signal	Power supply is defective or is not connected.	Ensure power supply.
	Connection cable to the antenna is defective or is not connected.	Ensure connection with antenna.
	Wall scanner antenna in the door module is defective	Contact ES Support
Status LED of the wall scanner control in the central control is off.	Power supply is defective or is not connected.	Ensure power supply.
	Wall scanner control in the central control is defective.	Contact ES Support
Each identifier is authorised to lock.	Fitting is not programmed ("construction site mode").	Program fitting, see eLOCK system documentation software.
Already teached in persons are not recognised, see also "Acoustic and optical signals" section.	Reflections on the forehead or spectacle lenses if incidental light is too strong.	Improve light conditions by ensuring uniform light distribution.
	Face too near or too far away	Change position of the face.
	Too dark.	Improve light conditions.
	Housing cover in the position of the camera is dirty.	Clean housing cover

8 Product Specifications

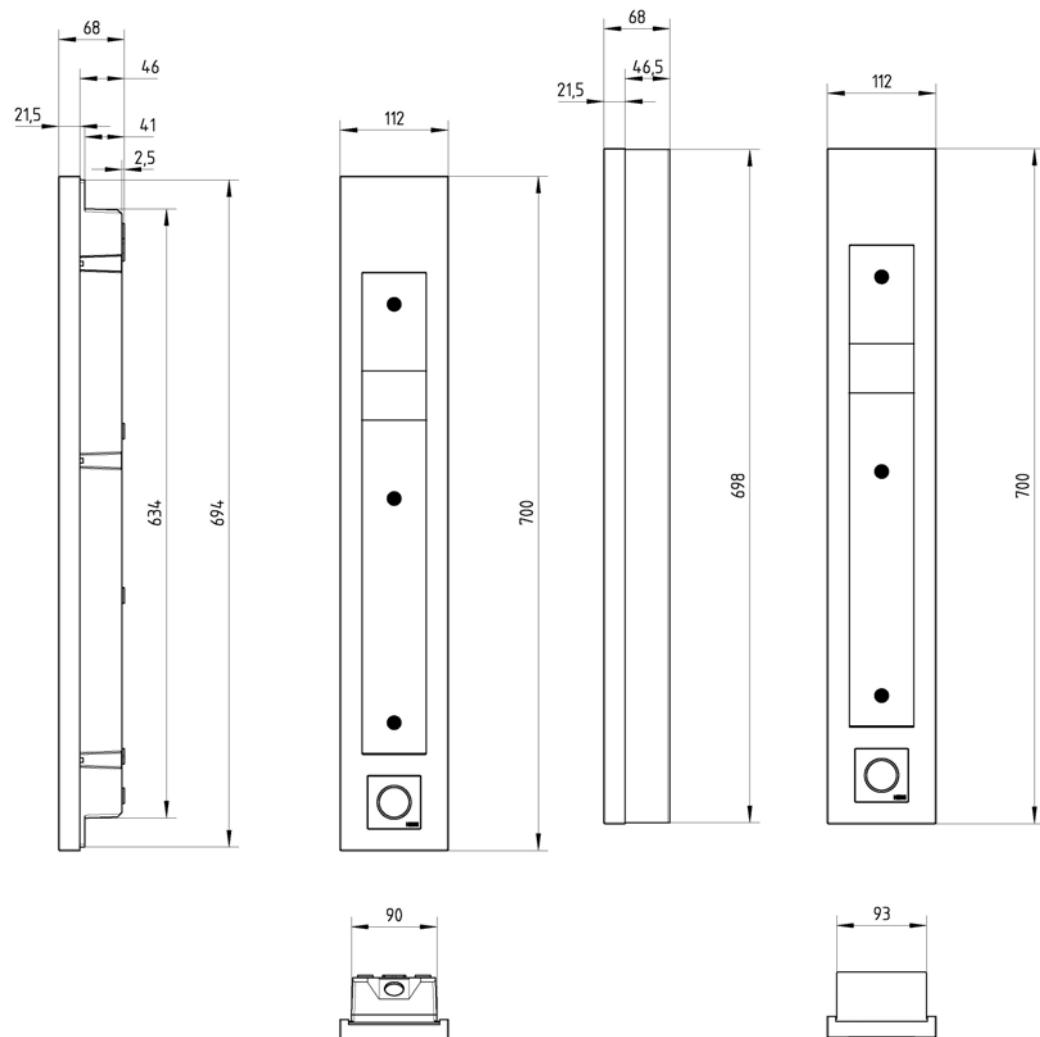
Declaration of conformity

OPERTIS GmbH herewith declares that the Biometrics Face module fulfil the basic standards and other relevant specifications of the 1999/5/EG directives and that they are CE compliant.

The Biometrics Face module conforms to the RoHS of Directive 2002/95/EC.

Dimensions

All dimensions are given in mm.



Technical data

Door module installation environment (in indoor area)

For flush-mounted installation

Installed position

Bottom edge of installation shaft 125 cm above the floor

Installed dimensions
(chiselled dimensions of installation shaft)

635 x 90 x 42 mm (H x W x D)

For surface-mounted installation:

Installed dimensions

698 x 111 x 67 mm (H x W x D)

Installed position

Bottom edge of door module 122 cm above the floor

Installation environment of central control (in the secured indoor area)

Dimensions

425 x 355 x 100 mm (H x W x D)

Power supply / connections

Power supply

100-120 VAC 2.8A
200-240 VAC 1.6A
50/60Hz

Interfaces

Ethernet connection (RJ45) for linking to a TCP/IP network

Outputs

- 1 relay output (Photomos, NO make contact)
- Activation of max. two external relays ES0531T with one electromechanical changeover contact each

Switching capacity

Make contact /NO relay max. 60 V AC/DC / 2.0 A

Specific data

Operating and storage temperature	0 °C to +50 °C
Humidity for operation and storage	max. 85 % non-condensing
Degree of protection according to EN 60529	IP20
Storage capacity:	
Identifiers	Any 500 identifiers of the 80,000 identifiers of a client
Protection zones (membership of a group of fittings)	30
Events (authorisation attempts)	628
Recognition range	From 115 to 200 cm from floor level at distance of 80 cm from the camera lens
Display	3.5“ TFT-LCD 320x234 Pixel 265,000 colours
Cameras	1/3“ CCD Camera 640x480 Pixel (scanned) 8mm focal distance
Light sensitivity	2 Lux

9 Disposal

Product



Disposal in accordance with WEEE Directive 2002/96/EC:

- Do not dispose of product by throwing it in the local household waste.
- Return product to OPERTIS or dispose of at a municipal collection point for hazardous electrical wastes.



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